

**ABSTRACT**

Medical imaging and navigation system including a processor, a display unit, a database, a medical positioning system (MPS), a two-dimensional imaging system, an inspected organ monitor interface, and a superimposing processor, the MPS including a transducer MPS sensor and a surgical tool MPS sensor, the two-dimensional imaging system including an imaging transducer, the processor being connected to the display unit, to the database, to the MPS, to the two-dimensional imaging system, to the inspected organ monitor interface, and to the superimposing processor, the inspected organ monitor interface being connected to an organ monitor, the surgical tool MPS sensor being firmly attached to a surgical tool, the transducer MPS sensor being firmly attached to the imaging transducer, the organ monitor monitoring an organ timing signal associated with an inspected organ.